A Collection of Fishes from the Coasts of Natal, Zululand, and Cape Colony.

By C. Tate Regan, M.A.

With Plates XXXVII—XLII.

A COLLECTION of marine fishes from Natal, Zululand, and Cape Colony, received from Dr. Warren, is of considerable interest. The specimens were obtained at five localities, viz. Kosi Bay, Zululand; Scottburgh, Durban Bay, and Congella, near Durban, Natal; and sixteen miles N.E. of Bird Island, Algoa Bay.

A complete list of the collection is first given, and afterwards the new species are described.

I.—SELACHH.

	Fam. Carcha	RHD.E.		
Mustelus	vulgaris M. & H.		. Bir	d Island.

Fam. SCYLIORHINIDÆ.

Scyliorhinus	africanus $(L.)$.	Bird Island.
"	edwardsii (Cuv.) .	,,
	variegatus (A. Smith)	,,
"	natalensis (Rgn.) .	"

Fam. SQUALID.E.

Squalus aeutipinnis sp. n.		Bird Island.
Pliotrema warreni Rgn.		

Fam. Squatinid.#.

Squatina africana sp. n. . . . Durban Bay.

Fam. Torpedinidæ.

Torpedo marmorata Risso. Bird Island, Congella, and Algoa Bay. Astrape capensis (L.) . . . Bird Island.

Fam. Rhinobatidæ.

Rhinobatus columnæ M. & H. Bird Island. " blochii M. & H. Bird Island and Durban Bay.

Fam. RAHDÆ.

Raia	marginata Lacep.		£	Bird Island.
,,	ocellifera <i>Rgn</i> .			•,
"	rhizacanthus Rgu.			,,

Fam. DASYBATIDÆ.

Dasybatis narnak	(Forsk.).		Durban Bay.
Myliobatis aquila	(L.) .		Bird Island.

Fam. Chimæridæ.

Callorhynchus antarcticus (Lacep.) . Bird Island.

H.—TELEOSTOMI.

Fam. CLUPEIDÆ.

Clupea durbanensis Rgn		Durban Bay.
Spratelloides delicatulus (Benn.)	٠	Kosi Bay.

Fam. Siluridæ.

Galeichthys feliceps C. & F. . . Bird Island.

Fam. ANGUILLIDÆ.

Murænēsox	cinerens (Forsk.)		Durban Bay.
Ophichthys	nnicolor sp. n.		Bird Island.
2.2	kirkii Gthr		Kosi Bay.

Fam, MURÆNIDÆ.

Muræna	polyophthalmus	Blkr.		Durban Bay.
,,	macrurus Blkr.			Kosi Bay.

Fam. Scombresocidæ.

Hemirhamphus	dussumi	eri C. d	Γ.	. Ko	si Bay. –
Belone robusta	Gthr.		•		"

Fam. MUGILID.E.

Mugil	robustus <i>Gthr</i> .			Kosi Bay.
,,	ceylonensis <i>Gthr</i> .	·		,,
,,	smithii <i>Gthr.</i>	•		,,
٠,	constantiæ C. & V.			Durban Bay,

Fain. Atherinidæ.

Аt	herina	pinguis.	Lacep. –				Kosi	Bay.⊥
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Fam. Gadidæ.

M	arluceius ea	pensis Casteln.	Bird Island.
THT (gradeenis ca	pensis custern.	 Diffu Island.

Fam. PLEURONECTID.E.

Platophrys pantherinus (Rüpp.)		Kosi Bay.
Pseudorhombus russellii (Gray)		Durban Bay.
Paralichthodes algœnsis Gilchr.		;,
Synaptura ciliata Gilchr		"
" pectoralis Kaup.		Bird Island.
Plagusia marmorata Blkr.		Kosi Bay.

Fam. SERRANIDÆ.

Epinephelus sonnerati (C. & V.)		•	Durban Bay.
" andersoni <i>Blgr</i> .			,,
" tauvina (<i>Forsk</i> .)			Congella.
", hemistictus (<i>Rüpp</i>	.).		Kosi Bay.
" maculatus (Bl.)			>>
Therapon servus (Bl.) .			Durban Bay.
Parascorpis typus Blkr			Bird Island.
Apogon warreni sp. n.			Durban Bay.
Cirrhitichthys maculatus (Lace	p.)		"
Pomatomus saltator (L.) .			Bird Island.
Lutianus gembra (C. & V.) .			Durban Bay.
"johnii (<i>Bl.</i>).			,,
" marginatus (C. & V.)			>>

Fam. Pomadasidæ.

Pomadasys tæniophorns sp. n. 🛛 .	Kosi Bay.
" multimaculatus (<i>Playf</i> .)	Durban Bay.
" hasta (<i>Bl</i> .)	>>
" opercularis (Gthr. & Playf.)	22
Diagramma griseum C. & V	Kosi Bay.
" affine <i>Gthr.</i>	Durban Bay.
., crassispinum Räpp	Kosi Bay.

Fam. Sparid.E.

Cantharus emarginatus C. &	V		Bird Island.
Dentex argyrozona C. & V.			,,
" undulosus sp. n			>>
Lethrinus nebulosus (Forsk.)			Kosi Ray.
Sargus cervinus (Lowe) .			,,
" capensis A. Smith .	Kosi Bay	and	Durban Bay.
"holubi Stdr	,,	,,	>>
", nigrofasciatus sp. n.			Bird Island.
Pagrus laniarius C. & V.	•		"

Chrysophrys gibbiceps C. & V. . Bird Island. hasta (Bl. Schn.) . Kosi Bay. ,, . bifasciatus (Forsk.) . ,, ,, sarba (Forsk.) . Durban Bay. " Pagellus lithognathus C. & V. . Bird Island. ", mormyrus (L.) . . Kosi Bay.

Fam. MULLID.E.

Mulloides flavolineatus (Lacep.) . . . Kosi Bay.

Fam. LIOGNATHIDÆ.

Gerres	longirostris Rüpp.	Durban	Bay	and Kosi Bay.
"	lineolatus <i>Gthr</i> .			Kosi Bay.
Equula	edentula (<i>Bl.</i>)			Durban Bay.

Fam. Sclexid.e.

Otolithus æquidens C. & V.		Bird Island,
Umbrina capensis Pappé		,,
Sciæna aquila Lacep.		>>
" margaritifera Haly.	•	Durban Bay

Fam. SILLAGINIDE.

Sillago sihama (Forsk.) .	Kosi Bay,
"chondropus Blkr	Durban Bay.
Fam. Pempherid.e.	
Pempheris molucca C. & V.	Kosi Bay.
Fam. Scorpidid.e.	
Psettus falciformis (Lacep.) .	Kosi Bay.
Fam. Cyphosid.E.	
Cyphosus fuscus (Lacep.)	Kosi Bay.
Fam. Chætodontidæ.	
Chætodon vagabundus L	Kosi Bay.
,, setifer Bl	•,

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Fam. Drepanid.	Æ.		
Drepane punctata (L .) .			Durban Bay.
Fam. Teuthidid	Æ.		
Teuthis oramin (Bl. Schn.) .	•	•	Kosi Bay.
Fam. Acanthuri	DÆ.		
Acanthurus triostegus $(L.)$		•	Kosi Bay.
" strigosus Benn.	•	•	• •
P. D.			
Fam. Pomacentri			
Glyphidodon sordidus (Forsk.)		•	Kosi Bay.
" cœlestinus C. & V.	•	•	"
Fam. Labridæ			
	,		
Julis umbrostigma Rüpp	•	•	Kosi Bay.
"lunaris (L.)	•	·	"
Platyglossus scapularis (Benn.)	•	•	,,
Fam. Scaridæ.			
			17 1 1)
Pseudoscarus maculosus (Lacep.)		•	Kosi Bay.
Fam. Carangida	ε.		
Trachurus trachurus $(L.)$.			Bird Island.
Caranx carangus (Bl.)	·		Durban Bay.
$n \circ + 1 \circ n i (D1)$	•	•	
(11)		•	>> >>
and the second of the T			,, Kosi Bay.
(U_1, I_2)	•		,,
,, speciosns ($rorsk$.) . ,, hippos (L .) .			
Trachynotus ovatus (L.) . Kos	i Bav	and	,, Durban Bay.
Chorinemus sancti-petri C. & V.			Durban Bay.
enormonius suicer petri c. u v.			Daroan Day,

Fam. TRICHIURIDÆ.

Lepidopus caudatus (Euphras.) . . Bird Island.

Fam. Gobild.e		
Eleotris ophiocephalus C. & V.		. Kosi Bay.
Fam. BLENNID	Æ.	
Blennius bifilum Gthr.		. Kosi Bay.
" punctifer sp. n		. ,, •
Salarias quadricornis C. & V.		• •,
., rivulatus <i>Rüpp</i>		
" kosiensis <i>sp. n.</i> .		• • • •
Fam. Ophidiid.	Ð.	
Genypterus capensis (A. Smith)		. Bird Island.
Fam. Scorp.#x11	DÆ.	
Scorpæna natalensis Rgn.		. Bird Island.
., rosea Day		. Durban Bay
", haplodactylus <i>Blkr</i> .		. Kosi Bay.
Pterois miles (Benn.) .		Scottburgh.
,, volitans $(L.)$.	•	. Kosi Bay.
Agriopus spinifer A. Smith		• • • • • • •
Fam. Triglida	Е.	
Trigla capensis C. & V.		. Bird Island,
Fam. PLATYCEPHA	LIDÆ.	
Platycephalus tentaculatus Rü	pp.	. Kosi Bay.
,, insidiator (Forsk.		
Fam. Balistide	E.	
Balistes aculeatus L.		. Kosi Bay,
Fam. Ostraciont	ID.E.	

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Ostracion cubicus L. Kosi Bay. Fam. TETRODONTIDE. Tetrodon honckenii Bl. Kosi Bay. " immaculatus Bl. Schn. . . . Durban Bay.

DESCRIPTIONS OF THE NINE NEW SPECIES.

Squalus acutipinnis sp. n. (Pl. XXXVII.)

Acanthias blainvillii (part.) *Günth*. Cat. Fish. viii, p. 419 (1870).

Snout pointed; nasal flaps bilobed; distance from nostrils to end of snout $\frac{2}{3}$ $-\frac{3}{4}$ that from month to nostrils. Base of second dorsal (without the spine) $\frac{1}{4}$ of its distance from the upper candal lobe and $\frac{1}{2}$ that of the first (without the spine), which is less than its height and about $\frac{2}{3}$ of its distance from the second dorsal; spines without ridges or grooves, that of the second dorsal not quite so high as the fin, in great part exposed. Pectoral extending well beyond the end of the base of first dorsal and at least ²/₃ of the distance from last gill-opening to origin of ventral, with the free edge nearly straight, the posterior angle nearly a right angle and the anterior angle much more acute than in S. blainvillii; ventrals not nearly reaching the second dorsal. Lower caudal lobe without posterior notch, its lower edge continnons with the posterior edge of the upper lobe. Gravish or brownish above, pale below.

South Africa; Mauritins.

Four specimens, a stuffed one from Mauritius (Robillard), one of 560 mm. from Natal, presented by Dr. E. Warren, one of 540 mm. from Table Bay, presented by Dr. J. D. F. Gilchrist, and one of 190 mm. from the Cape of Good Hope, from Sir Andrew Smith's collection.

Squatina africana sp. n. (Pl. XXXVIII.)

Folds at sides of head not produced into lobes. Outer nasal flap with entire edges; inner flap with two nearly simple prolongations, the outer of which has a fringed lobe at its base. Distance between the spiracles a little less than the interocular width. Outer angle of pectoral nearly a right angle;

distance from anterior angle to posterior end of base of pectoral $\frac{3}{5}$ the extreme length of the fin. Ventral not reaching the vertical from origin of first dorsal. Width of tail (at the base) about 1 of its length. Base of first dorsal a little more than } its height, which is a little more than its distance from the second; second dorsal a little shorter, but scarcely lower than the first; interspace between the dorsals a little less than the distance from second dorsal to caudal, much less than the distance from base of tail to origin of first dorsal. Posterior edge of caudal fin notched. the upper lobe vertically truncate above, the edge becoming oblique before its junction with the lower lobe, which is obliquely truncate. Upper surface with small pointed denticles, each with 3 keels; no median series of enlarged denticles; small imbricated denticles at outer edges of paired fins, extending on to their lower surface and, on the pectoral, forming an inferior marginal strip about $\frac{1}{4}$ as wide as the fin; denticles on lower surface of tail not extending forward to its base : lower surface of head and abdomen naked. Brownish. with numerous pale spots covered with brown reticulations.

A single specimen (\mathcal{J}), 800 mm. in total length, from Durban Bay, Natal.

This species is nearest to Sq. californica Ayres, which differs in markings and in having the greater part of the abdomen and of the lower surface of the paired fins covered with denticles in the adult. From the Japanese Sq. nebulos a *Regan* it differs especially in coloration, in having the folds at the sides of the head not produced into lobes and in the form and dimensions of the fins.

The species of Squatina may be arranged thus:

l. A mid-dorsal series of enlarged denticles present in the adult.

- (A) Distance between the spiracles greater than the interocular width.1. japonica Bleek.
- (B) Distance between the spiracles not greater than the interocular width.

Distance from anterior angle to posterior end of base of pectoral much more than $\frac{1}{2}$ the extreme length of the fin. 2. armata *Philippi*.

Distance from anterior angle to posterior end of base of pectoral a little more than $\frac{1}{2}$ the extreme length of the fin. 3. acnleata *Cuv*.

II. No mid-dorsal series of enlarged denticles in the adult.(A) Dermal denticles not carinate.

Folds at sides of head produced into an angular lobe on each side. 4. angelus Dum.

Folds at sides of head not produced into lobes.

5. australis Regan.

(B) Dermal denticles tricarinate.

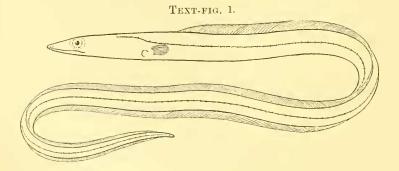
1. Folds at sides of head not produced into lobes.

Abdomen and lower surface of paired fins, in the adult, in great part covered by dermal denticles.

6. californica Ayres.

Abdomen naked; lower surface of paired fins with marginal strips of denticles. 7. africana Regan.

2. Folds at sides of head produced into two convex lobes on each side. 8. nebulosa Regan.



Ophichthys unicolor sp. n. (Text-fig. 1.)

Teeth pointed, subequal, in a double series in both jaws and on the vomer. Length of head $\frac{2}{5}$ the distance from gill-

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opening to vent; tail nearly twice as long as the rest of the fish. Snont nearly twice as long as eye, projecting beyond the mouth; cleft of mouth about $\frac{1}{3}$ the length of head, extending to below the posterior edge of eye. Origin of dorsal a little behind the end of the pectoral, which is $\frac{2}{3}$ as long as the head. Uniformly brownish.

Sixteen miles N.E. of Bird Island at a depth of 40 fathoms; bottom mud.

A single specimen, 260 mm. in total length.

Apogon warreni sp. n. (Pl. XLII.)

Depth of body equal to the length of head, $2\frac{3}{4}$ in the length of the fish. Snout $\frac{3}{5}$ as long as eye, the diameter of which is $3\frac{1}{5}$ in the length of head; interorbital width 5 in the length of head. Maxillary extending slightly beyond the vertical from posterior edge of eye; lower jaw shorter than the upper. Scales $25\frac{21}{8}$. Dorsal VI, I 9; second spine much stronger and a little longer than the third, nearly $\frac{1}{2}$ the length of head; first branched ray the highest, $\frac{3}{5}$ the length of head; free edge of soft dorsal straight. Anal II 8. Candal notched. Pectoral $\frac{2}{3}$ the length of head; ventrals extending to the anal. A dark band from eye to base of pectoral; a large dark longitudinally expanded spot on the candal pednucle.

Kosi Bay, Zululand.

A single specimen, 50 mm. in total length.

Pomadasys tæniophorus sp. n. (Pl. XXXIX.)

Depth of body $2\frac{1}{4}$ to $2\frac{1}{3}$ in the length, length of head $3\frac{1}{3}$ to $3\frac{1}{2}$. Snont shorter than eye, the diameter of which is $3\frac{1}{2}$ in the length of head and nearly equal to the interorbital width. Maxillary extending to below anterior $\frac{1}{2}$ of eye; depth of preorbital nearly equal to the diameter of eye; 12 gill-rakers on the lower part of the anterior arch. Scales 51-54 $\frac{7}{1.6}$. Dorsal XII 14-15, commencing above the opercular cleft; fourth spine the longest, a little more than $\frac{1}{2}$ the length of head; soft dorsal highest anteriorly, with straight or slightly vol. 1, PART 3. convex free edge, scaly at the base and with a series of scales behind each ray; longest rays less than $\frac{1}{2}$ the length of head. Anal III 7; second spine the longest, $\frac{3}{5}$ to $\frac{3}{3}$ the length of head. Caudal truncate or slightly notched. Pectoral longer than the head, extending to above the origin of anal; ventrals reaching the vent. Five or six pairs of dark longitudinal stripes on each side of the body, the stripes of each pair confluent posteriorly; vertical fins dusky.

Kosi Bay, Zululand.

Two specimens, 260 mm. in total length.

Allied to P. furcatus *Bl. Schn.*, which has III 8–10 anal rays, and still more closely to P. anas *Val.*, described and figured by Sauvage in his work on the fishes of Madagascar. The latter has the snout more produced, the maxillary not extending beyond the vertical from the anterior edge of the eye, and the dorsal commencing above the axil of the pectoral, which is shorter than the head.

Dentex undulosus sp. n. (Pl. XL.)

Dentex rupestris (non Cuv. & Val.) Casteln. Poiss. Afr. Austral., p. 28 (1861).

Depth of body $2\frac{3}{4}$ to 3 in the length, length of head $3\frac{1}{3}$ to $3\frac{2}{3}$. Snout $1\frac{1}{4}$ to 2 as long as eye, the diameter of which is $3\frac{1}{2}$ to $5\frac{1}{2}$ in the length of head; interorbital width 3 to $3\frac{1}{2}$ in the length of head. Jaws equal anteriorly; maxillary nearly reaching the vertical from the anterior edge of eye; 4 canines in the upper jaw, moderately strong, the inner pair scarcely smaller than the outer; 6 canines in the lower jaw, the innermost pair small. Depth of præorbital equal to the diameter of eye (adult) or less (young); cheek with 9 or 10 series of scales; præoperculum scaly; 14 to 16 gill-rakers on the lower part of the anterior arch. Scales $57-60 \frac{9\cdot10}{18-20}$. Dorsal XII 10; origin above axil of pectoral; spines of moderate strength, the third to the fifth the longest, $\frac{2}{5}$ or a little more than $\frac{2}{5}$ the length of head; soft

rays $\frac{1}{3}$ or nearly $\frac{1}{3}$ the length of head. Anal III 9; second and third spines subequal, $\frac{1}{3}$ or nearly $\frac{1}{3}$ the length of head. Candal forked. Pectoral longer than the head, extending to above the origin of anal. Upper half of body with from 3 to 6 undulating longitudinal dark stripes with pale edges; a large blackish spot on the side above the middle of the pectoral.

Sixteen miles N.E. of Bird Island, Natal, and Table Bay, Cape Colony (Gilchrist).

Dentex argyrozona *Cuv*. & *Val*, is nearest to this species, but has a larger mouth, stronger lateral canines, 6 to 8 scales in a transverse series above the lateral line, III 8 anal rays and a different system of coloration.

Sargus nigrofasciatus sp. n. (Pl. XLI.)

Depth of body 2 to $2\frac{1}{3}$ in the length, length of head 3 to 34. Shout with nearly vertical profile, longer than eye, the diameter of which is 41 in the length of head; interorbital region very convex, its width $2\frac{2}{3}$ in the length of head. Maxillary extending to below anterior $\frac{1}{3}$ of eye; depth of preorbital equal to diameter of eye; cheek with 5 series of scales; 10 short gill-rakers on the lower part of the anterior arch. Incisors moderately broad, implanted vertically in the upper jaw, obliquely in the lower; 4 or 5 series of molars in the upper jaw, 3 in the lower. Scales $55-57\frac{6-7}{13-14}$. Dorsal XI 12, commencing above the axil of pectoral; fourth spine the longest, $\frac{1}{2}$ to $\frac{3}{5}$ the length of head; last spine $\frac{2}{5}$ to $\frac{1}{2}$ the length of head and as long as the soft rays. Anal III 11; second and third spines subequal, as long as the last of the Caudal forked. Pectoral longer than the head, dorsal. extending beyond the origin of anal; ventrals reaching the vent. Body with 6 or 7 blackish vertical bars; thoracic region and upper part and sides of head blackish.

Sixteen miles N.E. of Bird Island, Natal, at a depth of 40 fathoms.

Two specimens, 360 mm. in total length.

Allied to S. holn bi Stdr. which has the preorbital deeper,

the spinous dorsal lower, the soft dorsal usually of thirteen rays, and the coloration uniform except for a small dark spot at the root of the pectoral.

Blennius punctifer, sp. n. (Pl. XLII.)

Depth of body $3\frac{2}{3}$ to 4 in the length, length of head $4\frac{1}{5}-4\frac{2}{5}$. Snout obtuse, with nearly vertical anterior profile. Diameter of eye $3\frac{1}{2}$ to 4 in the length of head and twice the width of the flat interorbital region. Maxillary extending to below posterior edge of eye; very small canines in the lower jaw. On each side a short fringed nasal tentacle and a similar supra-orbital tentacle; occiput with a median series of simple filaments. Dorsal XII 14-15, with a very slight notch, commencing above the edge of præoperculum, ending just before the caudal; spinous part as high as or a little lower than the moderately elevated soft-rayed part. Anal 17-19. Candal subtruncate. Pectoral extending to above origin of anal. Back with 6 more or less distinct dark cross-bars; numerous very small dark spots on head, body, dorsal fin and base of pectoral fin; series of larger spots on caudal, anal and distal part of pectoral; a more or less distinct dark spot or ocellus behind the first dorsal spine.

Kosi Bay, Zuhuland and Port Natal (Ayres).

Three specimens, measuring up to 100 mm. in total length. Blennius cristatus *Linn*. is described by Cuvier & Valenciennes from the Island of Ascension as having the supra-orbital tentacles very small and simple, the anal fin with 16 rays, and the markings somewhat different.

Salarias kosiensis sp. n. (Pl. XLII.)

Depth of body equal to length of head, $3\frac{2}{3}$ in the length of the fish. Snout obtuse, with nearly vertical anterior profile. Diameter of eye 5 in the length of head and equal to the width of the somewhat concave interorbital region. Maxillary extending to below posterior edge of eye; canines present in the lower jaw. On each side a short fringed nasal tentacle

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and a long simple supra-orbital tentacle; a transverse series of short filaments across the nape. Dorsal XI 12, deeply notched, ending just before the candal; spinous part lower than the rather elevated soft-rayed part. Anal 15. Candal rounded. Pectoral extending beyond the origin of anal. Blackish-grey, with some white spots and markings.

Kosi Bay, Zululand.

A single specimen, 185 mm. in total length.

This species is very close to S. variolosus C. & V., which has the supra-orbital tentacles small and fringed.

